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PTO/SB/21 (04-07)
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/821,466
Filing Date	April 8, 2004
First Named Inventor	Yu, et al.
Art Unit	2825
Examiner Name	Mr. Paul Dinh
Attorney Docket Number	A1168

ENCLOSURES *(Check all that apply)*

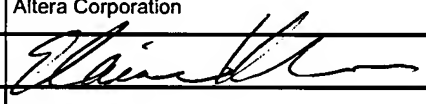
- [x] Fee Transmittal Form
- [x] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):
  Certificate of Correction
  Return Receipt Postcard

Remarks

The first-named inventor should read Zunhang Yu, not Zunghang Yu as currently shown. Please enter the certificate of correction on the issued patent.

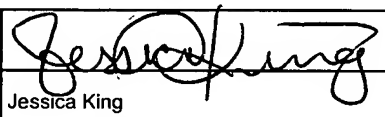
Certificate of Correction
MAY 11 2007

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Altera Corporation		
Signature			
Printed name	Elaine K. Lee		
Date	May 1, 2007	Reg. No.	41,936

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Jessica King	Date	5/1/07

MAY 11 2007

PTO/SB/17 (02-07)
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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2007

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	($)	100.00

Complete if Known	
Application Number	10/821,466
Filing Date	April 8, 2004
First Named Inventor	Yu, et al.
Examiner Name	Mr. Paul Dinh
Art Unit	2825
Attorney Docket No.	A1168

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 502300 Deposit Account Name: Altera Corporation

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☑ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee ($)		Fee Paid ($)
_____	- 20 or HP =	_____	x	_____	=	_____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee ($)		Fee Paid ($)
_____	- 3 or HP =	_____	x	_____	=	_____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	Fee Paid ($)
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
_____	- 100 =	_____	/ 50 =	_____	(round up to a whole number) x	_____	=	_____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): Post Issuance Fee - Certificate of Correction for Applicant's Mistake	100.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 41,936	Telephone 408-544-7591
Name (Print/Type)	Elaine K. Lee		Date May 1, 2007

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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MAY 11 2007

PTO/SB/44 (04-05)
Approved for use through 04/30/2007. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : US 7,178,117

APPLICATION NO.: 10/821,466

ISSUE DATE : 2/13/07

INVENTOR(S) : Yu, et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

TITLE PAGE (75) Inventor(s): Zunghang Yu should read Zunhang Yu.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Altera Corporation
101 Innovation Drive
San Jose, CA 95134

MAY 11 2007

US007178117B1

(12) **United States Patent**
Yu et al.

(10) **Patent No.: US 7,178,117 B1**
(45) **Date of Patent: Feb. 13, 2007**

(54) **APPARATUS AND METHOD FOR RTL BASED FULL CHIP MODELING OF A PROGRAMMABLE LOGIC DEVICE**

(75) Inventors: **Zunghang Yu**, Sunnyvale, CA (US); **Ninh Ngo**, San Jose, CA (US); **Guy Dupenloup**, Redwood City, CA (US)

(73) Assignee: **Altera Corporation**, San Jose, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 170 days.

(21) Appl. No.: **10/821,466**

(22) Filed: **Apr. 8, 2004**

(51) **Int. Cl.**
G06F 17/50 (2006.01)
G06F 9/45 (2006.01)
H03K 17/693 (2006.01)

(52) **U.S. Cl.** **716/5**; 716/1; 716/4; 716/16

(58) **Field of Classification Search** 716/1–2, 716/4–7, 16, 18; 703/23
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,911,061 A * 6/1999 Tochio et al. 703/23
6,651,225 B1 * 11/2003 Lin et al. 716/4
2004/0268288 A1 * 12/2004 Bajuk et al. 716/16

* cited by examiner

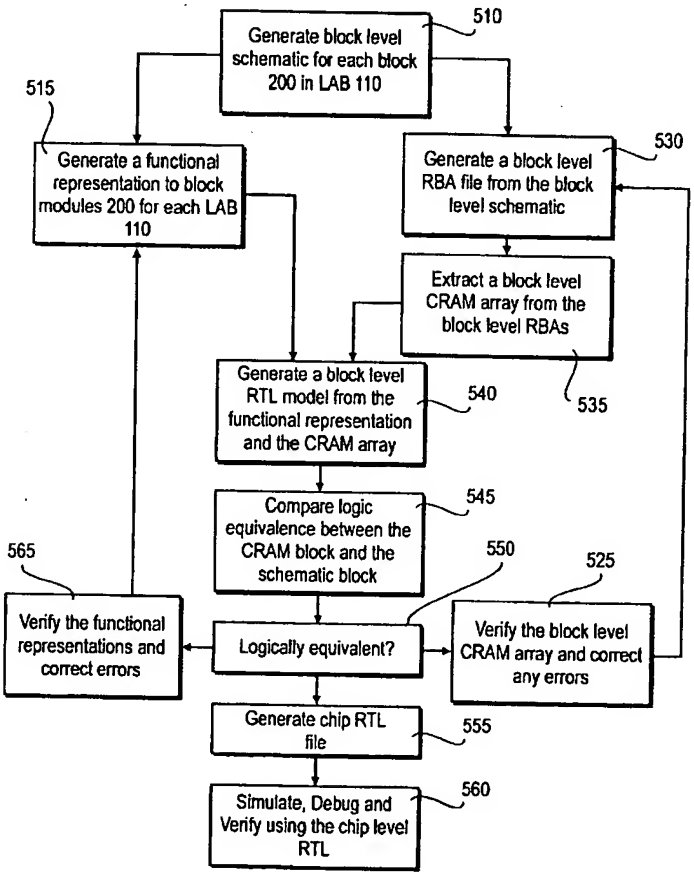
Primary Examiner—Paul Dinh
Assistant Examiner—Suresh Memula

(57) **ABSTRACT**

An RTL representation for a LAB is generated. A full chip RTL model is then generated using a plurality of the LAB RTLs. Using the full chip RTL model, a full chip simulation of the PLD chip is performed to verify and debug the electronic design.

15 Claims, 10 Drawing Sheets

Zunhang Yu



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